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Serial No. 10/636,623

LISTING OF CLAIMS

The following listing of claims replaces all previous versions, and listings, of claims in the present application.

1. (Currently Amended) A system for activating a passenger-protecting device mounted on an automotive vehicle according to behavior of the vehicle, the activating system comprising:

an angular velocity sensor for detecting rolling angular velocity of the vehicle;

means for calculating a difference between two angular velocities detected in a predetermined time interval;

means for determining that the vehicle is rolling over when the difference between two angular velocities exceeds a predetermined value, the determining being made solely based on the difference between the two angular velocities; and

means for activating the passenger-protecting device when the determining means determines that the vehicle is rolling over.

2. (Currently Amended) A system for activating a passenger-protecting device mounted on an automotive vehicle according to behavior of the vehicle, the activating system comprising:

an angular velocity sensor for detecting rolling angular velocity of the vehicle;

first calculating means for calculating a difference between two rolling angular velocity values detected in the angular velocity sensor over a predetermined time interval;

second means for calculating a rolling angle of the vehicle based on the angular velocity detected by the angular velocity sensor;

first determining means for determining that the vehicle is rolling over, the determining being made first based on whether the difference calculated by the first means for calculating

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~~exceeds a predetermined value, and second based on the rolling angle calculated by the second determining means, if the difference does not exceed the predetermined value; and when the detected rolling angle velocity and the calculated rolling angle satisfy a predetermined threshold;~~
~~second calculating means for calculating a difference between two angular velocities detected in a predetermined time interval;~~
~~second determining means for determining that the vehicle is rolling over when the difference between two angular velocities exceeds a predetermined value; and~~
 means for activating the passenger-protecting device when either the first or the second determining means determines that the vehicle is rolling over.

3. (Withdrawn) A system for activating a passenger-protecting device mounted on an automotive vehicle according to behavior of the vehicle, the activating system comprising:
 an angular velocity sensor for detecting rolling angular velocity of the vehicle;
 first calculating means for calculating a rolling angle of the vehicle based on the angular velocity detected by the angular velocity sensor;
 means for determining that the vehicle is rolling over when the detected angular velocity and the calculated rolling angle satisfy a predetermined threshold;
 means for activating the passenger-protecting device when the determining means determines that the vehicle is rolling over;
 second calculating means for calculating a difference between two angular velocities detected by the angular velocity sensor in a predetermined time interval; and
 means for changing the predetermined threshold according to the difference between two angular velocities.

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4. (Withdrawn) The system for activating a passenger-protecting device as in claim 3, wherein:

the predetermined threshold defines a rollover region and a non-rollover region on a two-dimensional coordinate having an abscissa showing the rolling angle thereon and an ordinate showing the angular velocity thereon, the non-rollover region being located in an area including the origin of the two-dimensional coordinate; and

the determining means determines that the vehicle is rolling over when a locus of the detected angular velocity and the calculated rolling angle on the two-dimensional coordinate crosses the threshold and enters into the rollover region from the non-rollover region.

5. (Withdrawn) The system for activating a passenger-protecting device as in claim 4, wherein:

the changing means moves the predetermined threshold toward the origin of the two-dimensional coordinate as the difference between two angular velocities becomes larger.

6. (Original) The system for activating a passenger-protecting device as in claim 1, wherein:

the passenger-protecting device includes at least one device selected from a group consisting of a curtain airbag, a seatbelt with a pretensioner and a device for repeatedly winding a seatbelt by a motor.

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7. (Original) The system for activating a passenger-protecting device as in claim 2, wherein:

the passenger-protecting device includes at least one device selected from a group consisting of a curtain airbag, a seatbelt with a pretensioner and a device for repeatedly winding a seatbelt by a motor.

8. (Withdrawn) The system for activating a passenger-protecting device as in claim 3, wherein:

the passenger-protecting device includes at least one device selected from a group consisting of a curtain airbag, a seatbelt with a pretensioner and a device for repeatedly winding a seatbelt by a motor.

9. (New) The system for activating a passenger-protecting device as in claim 1, wherein the predetermined time interval is between 25 and 100 milliseconds.

10. (New) The system for activating a passenger-protecting device as in claim 2, wherein the predetermined time interval is between 25 and 100 milliseconds.

11. (New) A system for activating a passenger-protecting device mounted on an automotive vehicle according to behavior of the vehicle, the activating system comprising:

an angular velocity sensor for detecting a first rolling angular velocity of the vehicle at a first time and for detecting a second rolling angular velocity of the vehicle at a second time after the first time;

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a calculating element for determining a difference between the first and second rolling angular velocities;

a roll detector for determining whether the vehicle is rolling over based solely on whether the difference between the first and second rolling angular velocities exceeds a predetermined value; and

an activation element for activating the passenger-protecting device when the roll detector determines that the vehicle is rolling over.

12. (New) The system for activating a passenger-protecting device as in claim 10, wherein the difference between the first and second times is between 25 and 100 milliseconds.

13. (New) The system for activating a passenger-protecting device as in claim 11, wherein:

the passenger-protecting device includes at least one device selected from a group consisting of a curtain airbag, a seatbelt with a pretensioner, and a device for repeatedly winding a seatbelt by a motor.

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